We claim:

1. (Currently Amended) A protective circuit having hot, neutral, and ground leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a multi-phase power distribution network and corresponding device hot, neutral, and ground leads of at least one electrical and/or electronic device, the protective circuit responding to abnormal power conditions incoming from the power utility outlet and reducing or eliminating ground noise or noise between the ground and neutral leads transmitted to the devices, the protective circuit comprising:

a neutral-ground voltage surge protection/filtration circuit including at least one LC filter circuit component having;

at least one inductive component disposed in the circuit ground lead; and

at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor towards the device, where the at least one ~~the~~ LC filter circuit component is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices.

2. (Original) The protective circuit of claim 1, further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component.

3. (Original) The protective circuit of claim 2, wherein when the at least one first switch is in its opened condition, then the utility part of the neutral lead is disconnected from the device part of the neutral lead protecting the device and when the at least one first switch is in its closed condition the utility part of the neutral lead is connected to the device part of the neutral lead activating the device.

4. (Original) The protective circuit of claim 1, further comprising: a hot-neutral voltage surge protection/filtration circuit component adapted to substantially reduce noise between the hot and neutral ends and to clamp a voltage between the leads, and a hot-ground voltage surge protection circuit component adapted to substantially reduce noise between the hot and ground ends and to clamp a voltage between the leads.

5. (Original) The protective circuit of claim 4, further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; a second relay controlling a second switch, where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

6. (Original) The protective circuit of claim 5, wherein when the first switch is in its opened condition, then the utility part of the neutral lead is disconnected from the device part of the neutral lead protecting the device and when the first switch is in its closed condition the utility part of the neutral lead is connected to the device part of the neutral lead activating the device.

7. (Original) The protective circuit of claim 5, wherein when the second switch is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead

protecting the device and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead.

8. (Original) The protective circuit of claim 5, wherein: when the first switch is in its opened condition, then the utility part of the neutral lead is disconnected from the device part of the neutral lead protecting the device; when the first switch is in its closed condition the utility part of the neutral lead is connected to the device part of the neutral lead activating the device; when the second switch is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead protecting the device; and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead.

9. (Original) The protective circuit of claim 5, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; and an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

10. (Original) The protective circuit of claim 5, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch for providing current to the relay circuit; and an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

11. (Original) The protective circuit of claim 5, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

12. (Original) The protective circuit of claim 5, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed.

13. (Original) The protective circuit of claim 1, further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state.

14. (Currently Amended) The protective circuit of claim 1, wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor and a plurality of LC filter circuit components, each LC filter circuit including at least one inductor disposed in the circuit ground lead and at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor toward the device, where the LC filter circuits ~~is~~ are adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices.

15. (Currently Amended) A protective circuit having hot, neutral, and ground leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a power distribution network and corresponding device hot, neutral, and ground leads of electrical and/or electronic devices, the protective circuit responding to abnormal power conditions incoming from the power utility outlet and reducing or eliminating ground noise or noise between the ground and neutral leads transmitted to the devices, the ~~protection/filtration~~ protective circuit comprising:

a hot-neutral voltage surge protection circuit component connected between the circuit hot and neutral leads,

a hot-ground voltage surge protection circuit component connected between the circuit hot and ground leads; and

a neutral-ground voltage surge protection/filtration circuit component connected between the circuit neutral and circuit ground leads including at least one LC filter circuit component having;

at least one inductor disposed in the circuit ground lead; and

at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor and a resistor adapted to discharge the capacitor, where the at least one the LC filter circuit component is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.

16. (Original) The protective circuit of claim 15, further comprising: a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component.

17. (Original) The protective circuit of claim 16, wherein when the first switch is in its opened condition, then the utility part of the neutral lead is disconnected from the device part of the neutral lead protecting the device and when the first switch is in its closed condition the utility part of the neutral lead is connected to the device part of the neutral lead activating the device.

18. (Currently Amended) The protective circuit of claim 15, further comprising: ~~a first relay controlling a first switch~~, a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of the components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; a second relay controlling a second switch, where the second switch is in an opened condition

when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

19. (Original) The protective circuit of claim 18, wherein when the first switch is in its opened condition, then the utility part of the neutral lead is disconnected from the device part of the neutral lead protecting the device and when the first switch is in its closed condition the utility part of the neutral lead is connected to the device part of the neutral lead activating the device.

20. (Original) The protective circuit of claim 18, wherein when the second switch is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead protecting the device and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead.

21. (Original) The protective circuit of claim 18, wherein: when the first switch is in its opened condition, then the utility part of the neutral lead is disconnected from the device part of the neutral lead protecting the device; when the first switch is in its closed condition the utility part of the neutral lead is connected to the device part of the neutral lead activating the device; when the second switch is in its opened condition, a utility part of the hot lead is disconnected from a device part of the hot lead protecting the device; and when the second switch is in its closed condition, then the utility part of the hot lead is connected to the device part of the hot lead.

22. (Original) The protective circuit of claim 18, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; and an electronic switch

responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

23. (Original) The protective circuit of claim 18, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch for providing current to the relay circuit; and an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

24. (Original) The protective circuit of claim 18, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

25. (Original) The protective circuit of claim 18, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed.

26. (Original) The protective circuit of claim 15, further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state.

27. (Currently Amended) The protective circuit of claim 15, wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor and a plurality of LC filter circuit components, each LC filter circuit including at least one inductor disposed in the circuit ground lead and at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor, where the LC filter circuits ~~is~~ are adapted to reduce or eliminate

ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.

28. (Original) A protective circuit having hot, neutral, and ground leads arranged to be placed between corresponding utility hot, neutral, and ground leads of a power utility outlet of a power distribution network and corresponding device hot, neutral, and ground leads of electrical and/or electronic devices, the protective circuit responding to abnormal power conditions incoming from the power utility outlet and reducing or eliminating ground noise or noise between the ground and neutral leads transmitted to the devices and reducing or eliminating ground leakage currents, the ~~protection/filtration~~ protective circuit comprising:

a hot-neutral voltage surge protection circuit component connected between the circuit hot and neutral leads,

a hot-ground voltage surge protection circuit component connected between the circuit hot and ground leads;

a neutral-ground voltage surge protection/filtration circuit component connected between the circuit neutral and circuit ground leads including at least one LC filter circuit component having;

at least one inductor disposed in the circuit ground lead; and

at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor and a resistor adapted to discharge the capacitor, where the at least one the LC filter circuit component is adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents;

a first relay controlling at least one first switch, where the at least one first switch is in an opened condition when no current is flowing through the first relay corresponding to an abnormal state of the circuit disconnecting some or all of components of the neutral-ground voltage surge protection/filtration circuit and where the first switch is in a closed condition when current is flowing through the first relay corresponding to a normal state of the circuit connecting the neutral-ground voltage surge protection/filtration circuit component; and

a second relay controlling a second switch, where the second switch is in an opened condition when no current is flowing through the second relay corresponding to an abnormal state of the circuit causing the second switch to disconnect the hot-neutral voltage surge

protection circuit component and the hot-ground voltage surge protection circuit component, and where the second switch is in a closed condition when current is flowing through the second relay corresponding to a normal state of the circuit causing the second switch to connect the hot-neutral voltage surge protection circuit component and the hot-ground voltage surge protection circuit component.

29. (Original) The protective circuit of claim 28, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; and an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

30. (Original) The protective circuit of claim 28, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage between the circuit hot and neutral leads exceeds a threshold value, a relay supply switch for providing current to the relay circuit; and an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply switch allowing the relays to transition between their closed and opened conditions.

31. (Original) The protective circuit of claim 28, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when a connection between ground leads is disconnected.

32. (Original) The protective circuit of claim 28, further comprising: a voltage threshold sensing circuit adapted to detect when the voltage on the circuit hot lead exceeds a threshold value; a relay supply switch for providing current to the relay circuit; an electronic switch responsive to the voltage threshold sensing circuit for disabling the relay supply allowing the relays to transition between their closed and opened conditions when the connection between the hot and neutral lead is reversed.

33. (Original) The protective circuit of claim 28, further comprising: a first indicator circuit for indicating a normal state, and a second indicator circuit for indicating an abnormal state.

34. (Currently Amended) The protective circuit of claim 28, wherein the neutral-ground voltage surge protection/filtration circuit component includes a resistor and a plurality of LC filter circuit component, each LC filter circuit including at least one inductor disposed in the circuit ground lead and at least one capacitor connected between the circuit neutral and circuit ground leads after the inductor, where the LC filter circuits ~~is~~ are adapted to reduce or eliminate ground noise or noise between ground and neutral leads transmitted to the devices and to reduce or eliminate ground leakage currents.